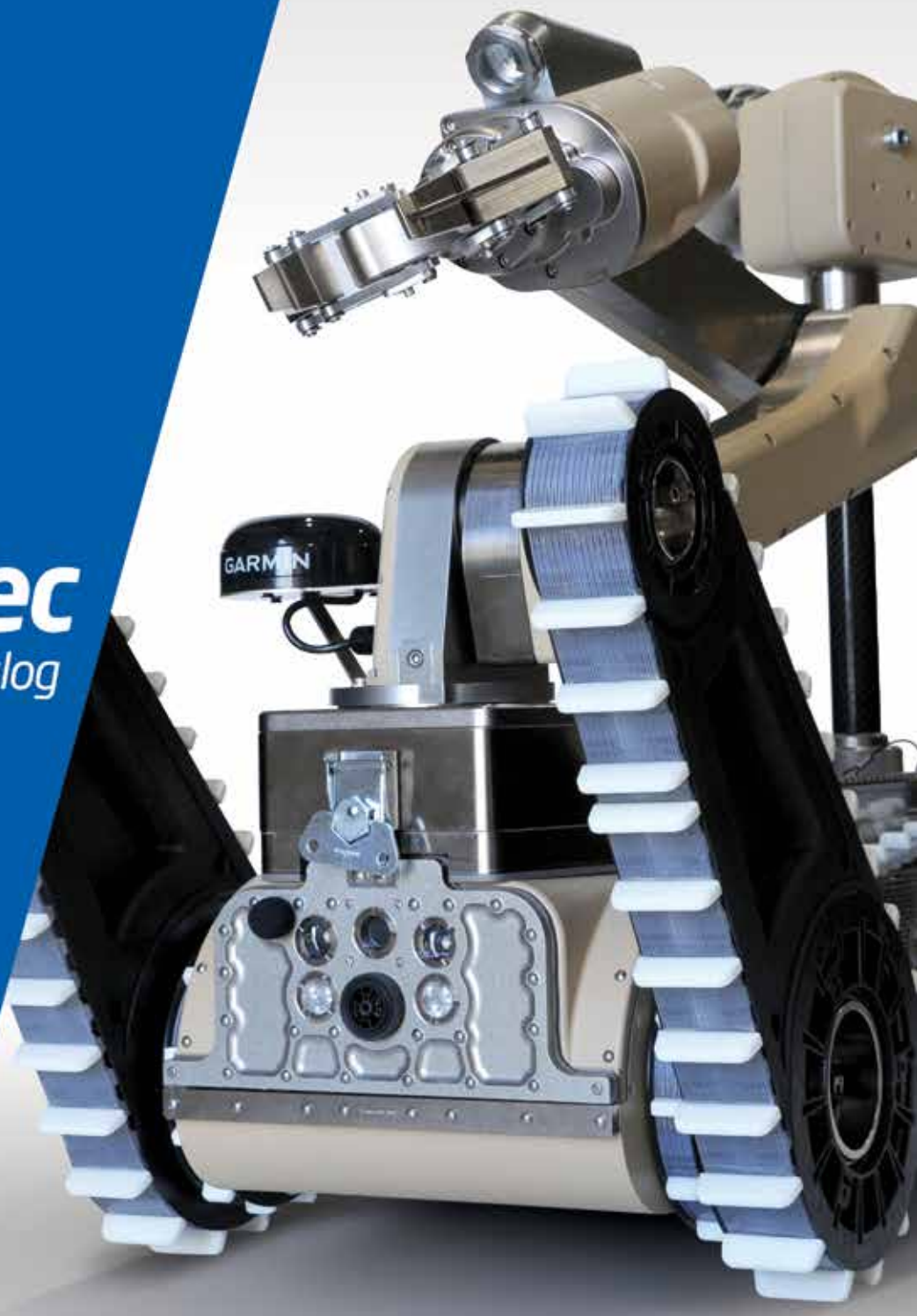
Remotec

2012 Product Catalog

NORTHROP GRUMMAN



Remotec, a subsidiary of Northrop Grumman, has over 30 years' experience designing, producing, and fielding Unmanned Ground Vehicles (UGVs); more than any other company. As a result, Remotec UGVs are the most rugged, reliable, and proven systems in the field; able to respond to the ever-changing challenges our customers face each and every day.

Remotec offers the widest range of UGVs and accessories in the market. This allows Remotec to work with our customers to provide systems tailored to fit their needs without compromising their requirements. The result is a system they can depend on to meet the broad range of missions encountered daily. With over 2,000 vehicles in the field, Remotec is the standard by which all other UGVs are measured.

Remotec works closely with our customers to develop new technologies while also extending those developments to systems already in the field. The ability to integrate new capabilities on fielded systems ensures our customers will be able to respond to evolving threats and provides maximum value for their system investment.

For quotes or more information about the products in this catalog contact the Remotec Sales Team:
(865) 269-1244 | remotecsales@ngc.com

All of Remotec's unmanned vehicle systems are ISO 9001:2008 compliant.

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GSA Contract Information
Remotec's GSA Contract #**GS-07F-0538M**

remotec.northropgrumman.com
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Andros™ HD Series

Small footprint. Big response.

The Andros™ HD Series is quickly becoming the "go-to" unmanned ground vehicle (UGV) for military, EOD, and other first-responders worldwide. With rugged reliability and unparralleled strength, no other UGV comes close.

Best-in-class Manipulator

- 7 degrees of freedom (including torso rotate) provide a more dextrous and capable arm
- Improved manipulator on the SEL and SX models more than doubles the lift capacity of the previous manipulator (up to 125 lbs)
- The HD SX provides a quick-release gripper/tool system and interchangeable gripper fingers

Position Presets

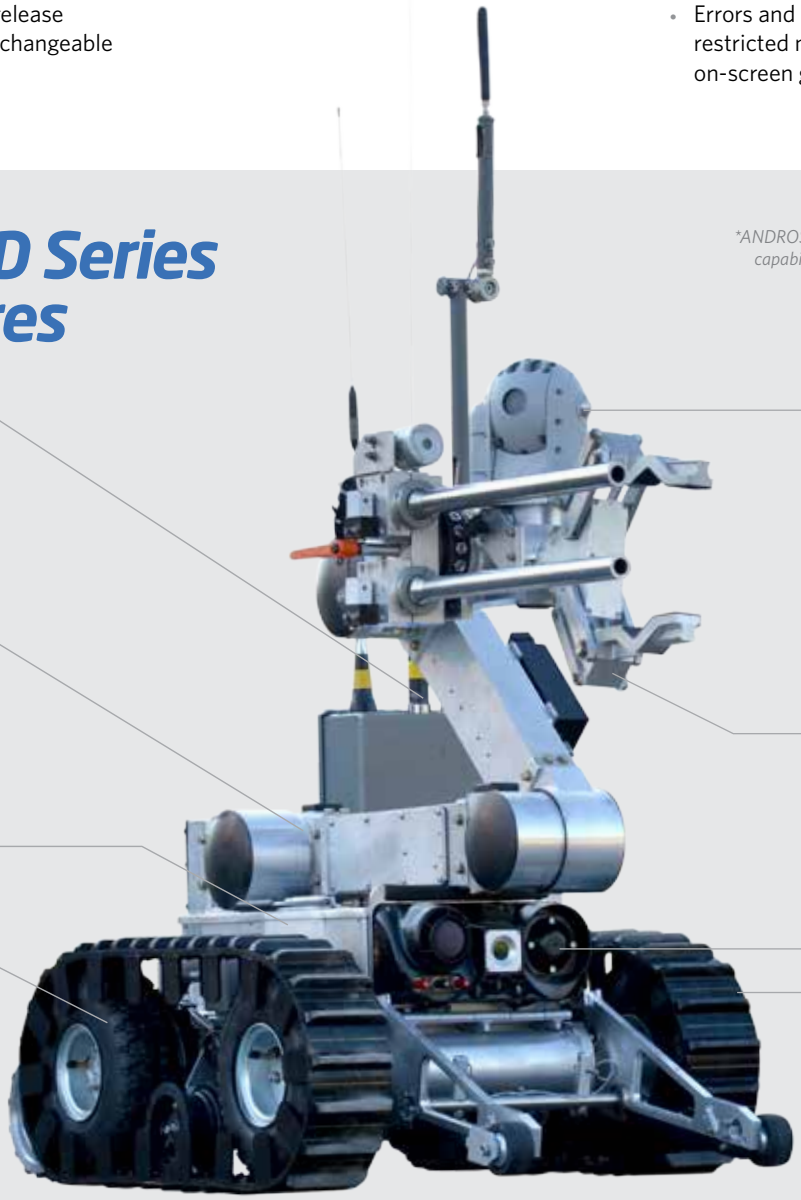
- Select from nine of the most commonly used positions, such as park, deploy, stair mode, and drive mode among others
- In addition, users may also save up to 10 of their own, user-defined presets. All presets are easily accessible, and quickly deployed

On-Screen Graphics

- Improved software that provides an on-screen representation of your vehicle's orientation
- This left-facing side view of the robot allows you to monitor feedback from on-board sensors in the manipulator (torso, shoulder, elbow, and wrist*) & articulators
- Errors and failures of joints, as well as restricted movements, are communicated on-screen graphically

Andros™ HD Series Key Features

**ANDROS HD Series SEL Pictured. Some options and capabilities not available with CE and SEL models.*



Choice of three manipulator arms with up to seven degrees of freedom ensuring optimum dexterity & flexibility

Zero-backlash manipulator with internalized motors & integrated sensors providing real-time on-screen position feedback

36V battery for extended operation

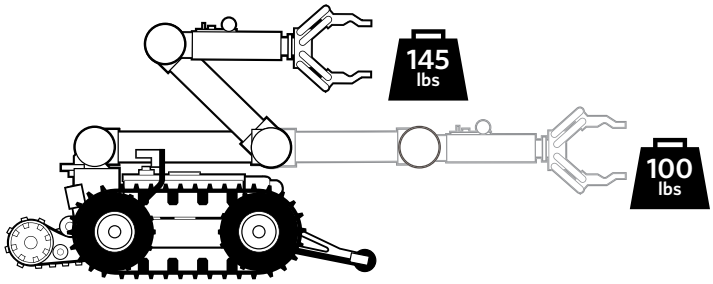
Improved articulators over the HD-1 make the HD Series one of the best stair climbing unmanned systems available

Improved Pan & Tilt with LED adjustable white light, 215:1 zoom*

Lift up to 145 lbs. with the strongest manipulator in its class

Molded front end with integrated front drive camera, speaker, microphone, firing circuits, and LED lighting

Get down range more quickly (5 mph) with an improved drive system



On-screen graphics provide real-time vehicle positioning (torso, shoulder, elbow, wrist, and articulators)

A key improvement in the HD Series over its predecessor is incredible stair climbing ability. The front articulators have been lengthened for stability, and new powered rear articulators are tracked for greater traction.

Dimensions

- Height: 25" (635 mm)
- Width: 26" (660 mm)
- Length: 48" (1209 mm)
- Ground Clearance: 4" (102 mm)

Weight™

- 260 lbs (118 kg)

Mobility™

- Tracked wheels with front & rear articulators
- Slope: 45º incline, 37º stairs
- Speed: 0 to 5 mph (0 to 8.4+ kph)
- Traverse: Opening up to 20" (508 mm)
- Turning: Within the length of the vehicle

Manipulator™

- Variable Speed Control for precision
- Dual-sided quick change accessory mounting system
- Torso Rotate: 318º w/feedback
- Shoulder: 88º w/position feedback
- Elbow: 254º w/position feedback
- Wrist: 254º w/position feedback
- Arm extend: 81" max. grip height (2054 mm)
- Grip rotate: 360º continuous w/ feedback
- Gripper: 0" to 6" open/close (0 to 150 mm)
- Lifting: 145 lbs close to chassis (65.8 kg)
- Vertical reach: 52" (1321 mm)
- Horizontal reach: 34" (851 mm) from front of vehicle

Cameras

Arm:

- Color camera with Auto/Manual focus
- Auto/Manual Iris
- Manually adjustable tilt
- LED light with remote switching from white to IR
- Extra low light color pan/tilt/zoom with full 360º 216:1 continuous pan, 180º tilt

Front Drive:

- Color camera with manually adjustable tilt

Rear Drive:

- Black & white, low light with fixed focus

Audio

- 2 Way Audio System with weatherproof speaker and microphone

Electrical

- 6 Isolated firing circuits: 24VDC
- Power supply: 36VDC Lithium Polymer battery pack with charger
- JAUS Compliant
- 1/4 Turn Connectors for easy connect/ disconnect
- Data Links: Interchangeable Fiber Optic Cable Reel, RF Analog/Hybrid System, or Hard-line Cable Reel System

Environmental™

- Sealed, weather resistant enclosure
- Wet or dry surfaces
- All-terrain

Other™

- 1.5 days of operator/maintenance training in Clinton, TN
- CD-ROM based operator and maintenance manual
- One year parts & labor warranty

Operator Control Unit™

- TAC-1 OCU with built-in 8.4" LCD
- Truck Mount Kit for vehicle integration
- Switchbox for direct connection to robot
- Tabletop with 15" LCD monitor with daylight readable, anti-glare screen
- Picture-in-picture display with camera selection switch
- Graphic display of vehicle status, console battery condition, camera setup functions, and sensor feedback
- Video and audio output for event recording
- Joystick control for easy navigation
- Removable key firing circuit system
- Heavy duty, portable, weather resistant
- Includes 50 amp-hr 12VDC battery and 110VAC smart charger
- Operates on either 12VDC battery or GFI 110 or 220 VAC cord
- Microphone, speaker, and volume control
- 38 lbs., 10" x 23" x 18" (H/W/D) (17.3 kg, 254 x 584 x 457 mm H/W/D)
- One of the data link options must be purchased

**Listed specifications are for the Andros™ HD SEL model.*

HD Series CE	HD Series SEL	HD Series SX
Software™ • JAUS Compliant Software • Improved & updated menu system	**Software™** • JAUS Compliant Software • Real-time position feedback on screen (excludes wrist & gripper) • 9 factory position presets • Up to 10 user-defined position presets • Improved & updated menu system	**Software™** • JAUS Compliant Software • Real-time position feedback on screen (includes wrist & gripper) • 9 factory position presets • Up to 10 user-defined position presets • Improved & updated menu system
Manipulator™ • 5 Degrees of Freedom	**Manipulator™** • 6 Degrees of Freedom • ANDROS upper arm tube and gripper	**Manipulator™** • 6 Degrees of Freedom • RE² upper arm tube with quick change gripper and tool assembly • Interchangeable gripper fingers
Lifting & Reach™ • Lifts 60 lbs close to body, 30 lbs at full extension • 52″ vertical 26″ horizontal reach	**Lifting & Reach™** • Lifts 145 lbs close to body, 100 lbs at full extension • 52″ vertical 34″ horizontal reach	**Lifting & Reach™** • Lifts 145 lbs close to body, 100 lbs at full extension • 52″ vertical 33″ horizontal reach
Cameras™ • Surveillance, Arm, Rear and Front Drive (optional “weapons” camera)	**Cameras™** • Arm, Rear & Front Drive (optional “weapons” camera) • Redesigned LED Pan & Tilt Arm camera	**Cameras™** • Arm, Rear & Front Drive (optional “weapons” camera) • Redesigned LED Pan & Tilt Arm camera

Andros™ F6B

The most trusted & reliable unmanned system for first response.

First responders around the world rely on the Andros™ F6 unmanned system each and every day to perform hazardous and dangerous duty operations. With best-in-class manipulator and drive system performance, it's the clear choice for multi-mission versatility.

On-Screen Graphics

- Improved software that provides an on-screen representation of your vehicle's orientation.
- This left-facing side view of the robot allows you to monitor feedback from on-board sensors in the manipulator (torso, shoulder, elbow, and wrist) & articulators.
- Errors and failures of joints, as well as restricted movements, are communicated on-screen graphically.

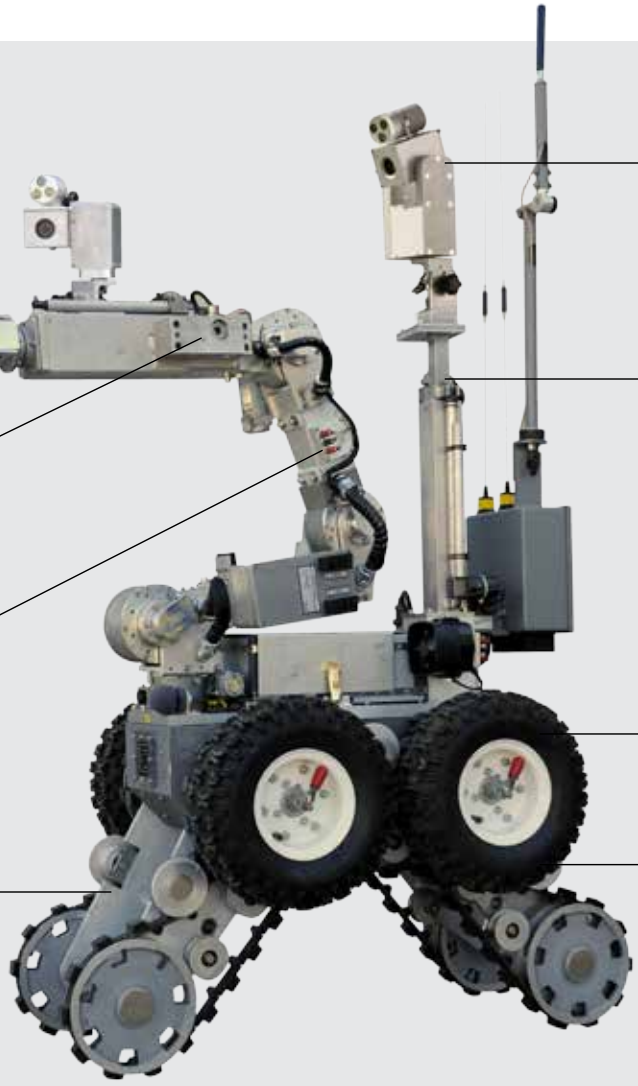
Position Presets

- Select from nine of the most commonly used positions, such as park, deploy, stair mode, and drive mode among others
- In addition, users may also save up to 10 of their own, user-defined presets. All presets are easily accessible, and quickly deployed

Improved Menu System

- More graphic, and intuitive menu-based interface.
- Menus are easier to navigate, and easier to read.
- The improved software also makes removing graphics or accessing status screens much more simple, giving the end-user quick access to distraction free driving.

Andros™ F6B Key Features



Pan & Tilt with LED adjustable white light, 216:1 zoom

24" camera extender for essential "top down" view

Gripper with continuous rotate

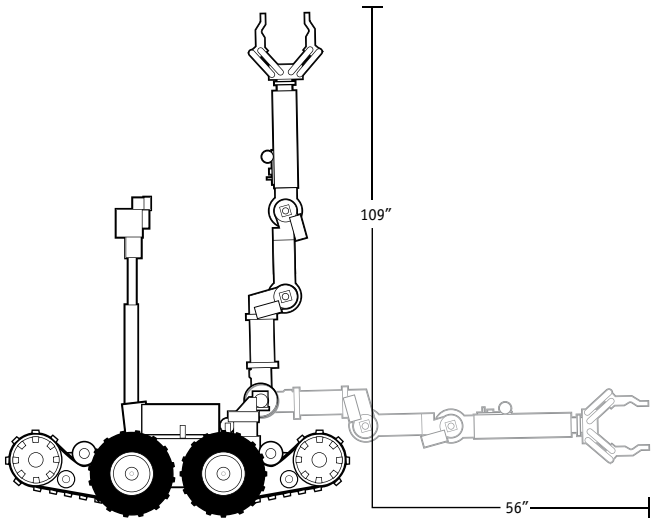
Multiple-mission tool/ sensor mounts with plug and play capabilities

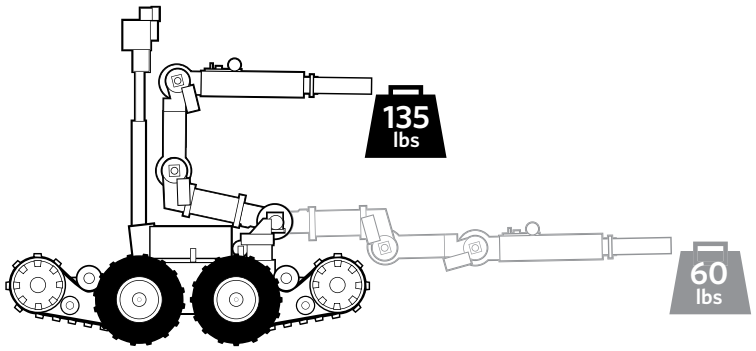
Manipulator arm with seven degrees of freedom ensuring optimum dexterity with position feedback

Optional rear drive camera

Patented articulating tracks allow for traversing ditches, obstacles and the roughest terrain

Quick-release pneumatic wheels for rapid width reduction





Dimensions

- Height: 58.5″ (1486 mm)
- Width: 29″ or 17.5″ (445 mm) without wheels
- Length: 52″ (1320 mm)
- Ground Clearance: 3.5″ (89 mm)

Weight™

- 490 lbs (220 kg)

Mobility™

- Articulated tracks with position feedback and quick release wheels
- Slope: 45º incline, 37º stairs
- Speed: 0 to 3+ mph (0 to 4.8+ kph)
- Traverse: Opening up to 21″ (533 mm) and Obstacles up to 18″ (457 mm)
- Turning: Within the length of the vehicle

Manipulator™

- Variable Speed Control for precision
- Dual-sided quick change accessory mounting system
- Torso Rotate: +/-90º w/feedback
- Shoulder: 210º w/position feedback
- Elbow: 210º w/position feedback
- Wrist: 180º w/position feedback
- Wrist extend: 8″ (203 mm)
- Grip rotate: 360º continuous w/ feedback
- Gripper: 0″ to 8″ open/close (0 to 203 mm)
- Lifting: 135 lbs at 18″ (61 kg @ 457 mm), 60 lbs at full extension (27 kg)
- Vertical reach: 109″ (2764 mm) with tracks down and arm fully extended
- Horizontal reach: 56″ (1422 mm) from front of vehicle

Cameras

Surveillance:

- Color camera with Low Light switching
- Extra low light color pan/tilt/zoom with full 360º 216:1 continuous pan, 180º tilt
- Auto/Manual Focus and Iris
- LED lights with remote switching from white to IR
- Motorized camera extender

Arm:

- Color camera with Auto/Manual focus
- Auto/Manual Iris
- Manually adjustable tilt
- LED light with remote switching from white to IR
- Manual 40:1 zoom
- Optional Arm Pan & Tilt Camera

Front Drive:

- B&W low light fixed focus; Auto Iris
- Optional Weapons Camera and laser sighting systems available.
- Optional Rear Drive Camera

Audio

- 2 Way Audio System with weatherproof speaker and microphone

Electrical

- 7 Isolated firing circuits: 24VDC
- Power supply: 24VDC 32 amp-hr gel-cell battery pack, Battery Charger, 110 or 220 VAC operation with optional cable reel link and AC power supply
- JAUS Compliant
- 1/4 Turn Connectors for easy connect/ disconnect
- Data Links: Interchangeable Fiber Optic Cable Reel, RF Analog/Hybrid System, or Hard-line Cable Reel System

Environmental™

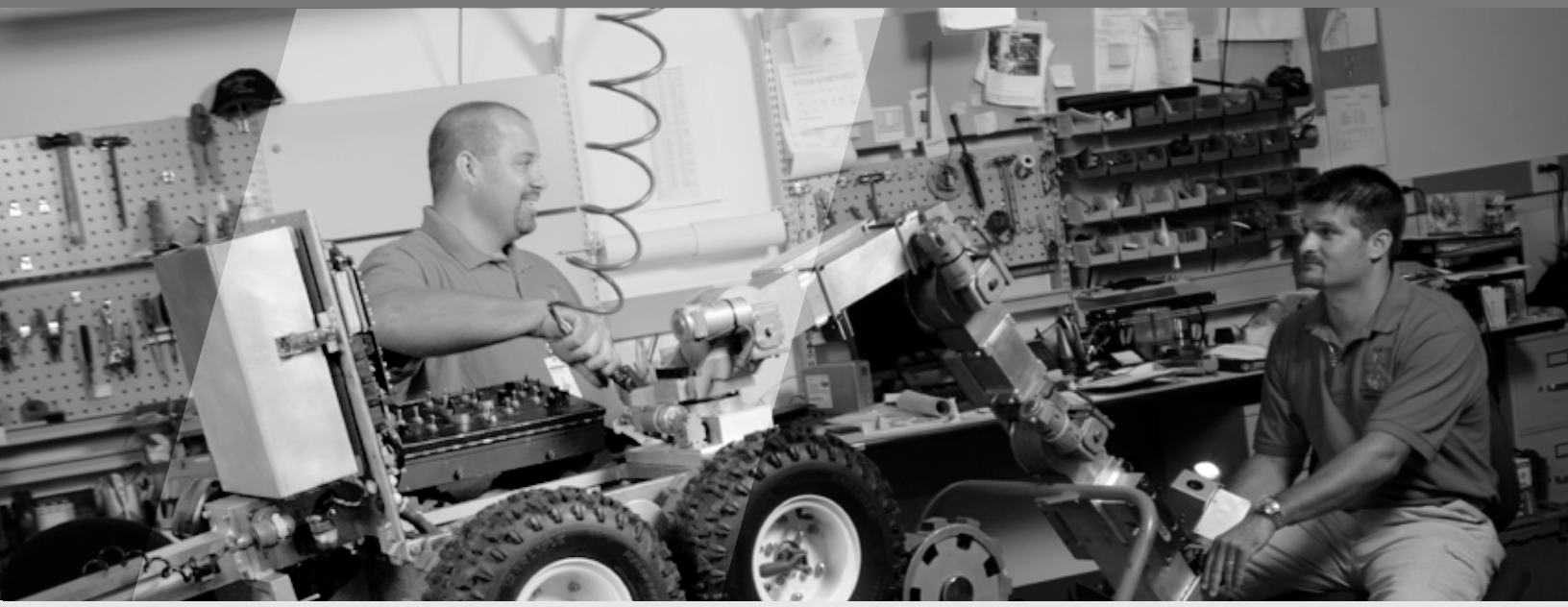
- Sealed, weather resistant enclosure
- Wet or dry surfaces

Other™

- 2.5 days of operator/maintenance training in Clinton, TN
- CD-ROM based operator and maintenance manual
- One year parts & labor warranty

Operator Control Unit™

- TAC-1 OCU with built-in LCD option
- Truck Mount Kit for vehicle integration
- Removable switchbox for direct connection to robot
- Tabletop with 15″ LCD monitor with daylight readable, anti-glare screen
- Picture-in-picture display with camera selection switch
- Graphic display of vehicle status, console battery condition, camera setup functions, and sensor feedback
- Video and audio output for event recording
- Joystick control for easy navigation
- Removable key firing circuit system
- Heavy duty, portable, weather resistant
- Includes 50 amp-hr 12VDC battery and 110VAC smart charger
- Operates on either 12VDC battery or GFI 110 or 220 VAC cord
- Microphone, speaker, and volume control
- 38 lbs., 10″ x 23″ x 18″ (H/W/D) (17.3 kg, 254 x 584 x 457 mm H/W/D)
- One of the data link options must be purchased



Andros™ F6+ Upgrade for Current F6A Owners

The Remotec F6+ Upgrade takes your current F6A (pre-JAUS or JAUS versions) and brings it to the same specs and capabilities of the Andros™ F6B, complete with real-time, on-screen position graphics, improved software, and position presets.

The Upgrade Process

- The upgrade of your current system to F6+ requires that the robot and any accessories be returned to our facility.
- Once your system arrives, Remotec technicians will perform a complete tear-down and service of the chassis and arm, including repacking the gears, rebuilding and test of all motor and gear packages, and general service.
- The arm will be rewired to include the pots and sensors necessary for preset positioning and on-screen graphics.
- Your robot will also receive a new electronics housing, including casting, JAUS electronics, and new top cover plate.
- The Remotec Service Department will perform a complete operational test of the entire system to ensure functionality and stability of the system.
- The F6+ upgrade process takes approximately three weeks from rebuild to testing.

Associated Costs

The cost of upgrading your current system varies depending on the age & condition of the vehicle as well as any additional accessories you may wish to add such as new tracks and tires, and repairs or maintenance not directly related to the upgrade (broken gears, burned out motors, etc).

Shipping costs to and from the facility are calculated separately from the upgrade cost.

Please contact a member of the Remotec Service Department with your current robot's information for more information and an accurate quote.

Andros™ Mark 5A-1

The most powerful & rugged unmanned system available.

The Andros™ Mark 5A-1 brings maximum flexibility and mobility to hazardous duty operations, with a wide base and powerful drive motors capable of deploying VBIED countermeasures and breaching entry ways, including outward facing doors.

Superior Strength

- The 5A-1's highly capable manipulator can lift up to 145 lbs close to the body, and 60 lbs at full extension
- A powerful and resilient drive system allows users to mechanically breach entry ways and outward facing doors

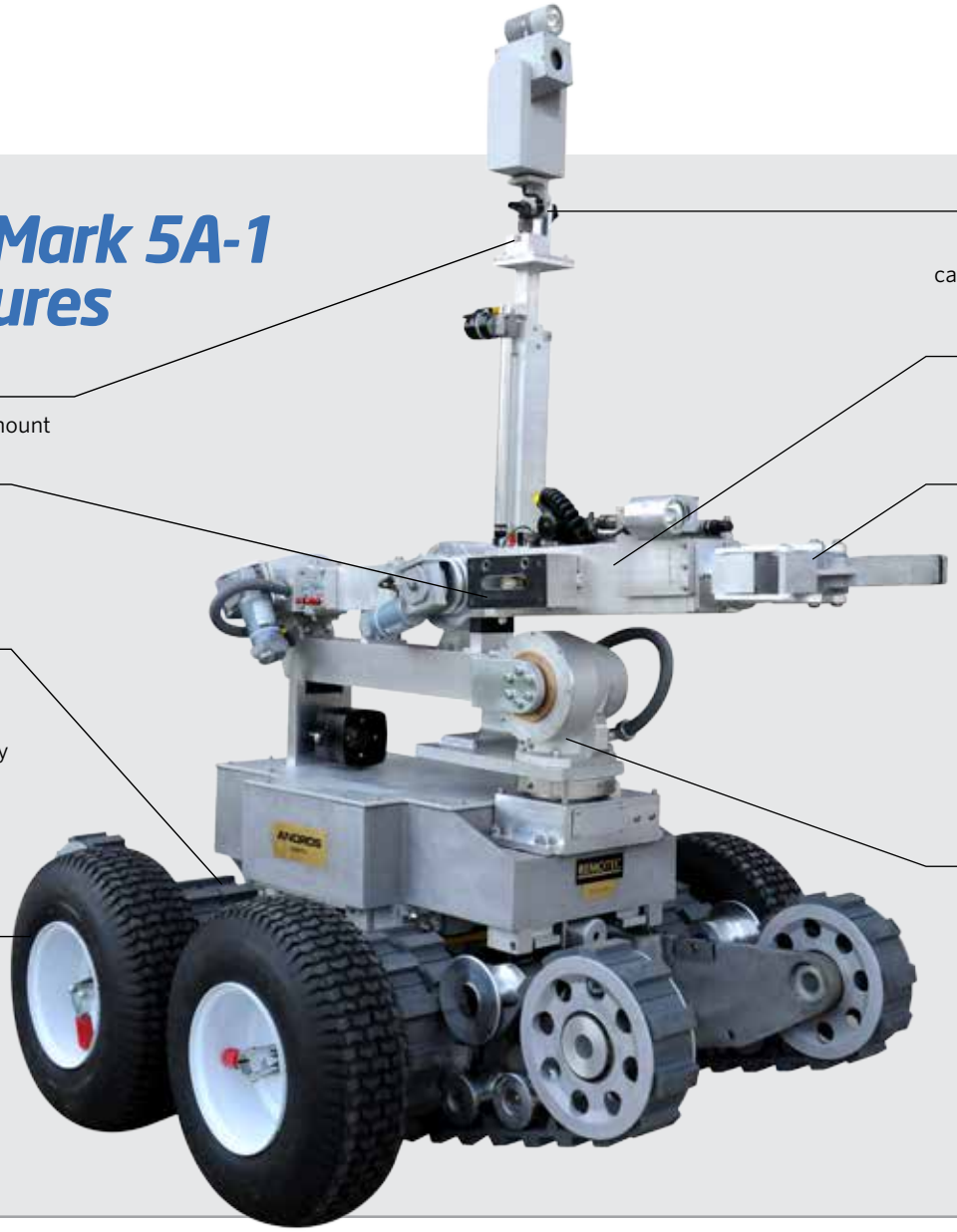
Rugged Dependability

- All Andros™ electronics are housed in a rugged weather-resistant enclosure
- The 5A-1's wide wheel base and track system, together with a cast chassis and durable aluminum construction provide all-terrain mobility and multi-mission dependability

World Class Service & Support

- Each Andros™ unmanned system comes with access to the best service and support available, offering 24/7 on-call support technicians for over-the-phone troubleshooting & maintenance help
- Purchase includes 2.5 days of hands-on operator training at the Remotec facility in Clinton, TN

Andros™ Mark 5A-1 Key Features



Color surveillance camera with light, 216:1 zoom, pan/tilt

24-inch camera extender

Gripper with continuous rotate

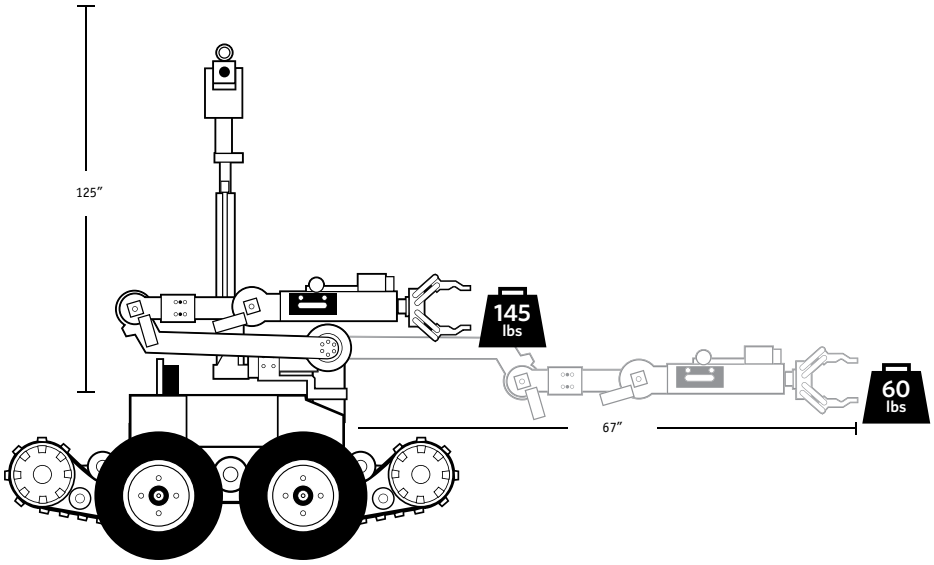
Manipulator arm with seven degrees of freedom ensuring optimum dexterity

Quick disconnect camera mount

Multiple mission plug and play tool/sensor mounts

Drive system powerful enough to breach forward facing doors & deliver heavy VBIED countermeasures

Quick-release pneumatic wheels



The 5A-1's quick-release pneumatic wheels provide agility and flexibility to quickly adapt the system to meet the mission at hand.

Dimensions

- Height: 46.5" (1181 mm)
- Width: 43" (1092 mm) or 28.5" (724 mm) without wheels
- Length: 48" (1219 mm)
- Ground Clearance: 5.3" (134 mm)

Weight™

- 790 lbs (358 kg)

Mobility™

- Articulated tracks and quick-release pneumatic wheels
- Slope: >45º
- Speed: 0 to 3.5 mph (0 to 5.6 kph)
- Traverse: Opening up to 24" (609 mm)
- Turning: Within the length of the vehicle

Manipulator™

- Variable Speed Control for precision
- Dual-sided quick change accessory mounting system
- Torso Rotate: +/-170º from center
- Shoulder: 210º
- Elbow: 210º
- Wrist: 210º
- Wrist extend: 8" (203 mm)
- Grip rotate: 360º continuous
- Gripper: 0" to 8" open/close (0 to 203 mm); 0 to 50 lbs pressure (0 to 23 kgs)
- Lifting: 145 lbs at 18" (66 kg @ 457 mm), 60 lbs at full extension (27 kg)
- Vertical reach: 125" (3175 mm)
- Horizontal reach: 67" (1702 mm)

Cameras

Surveillance:

- Color camera with Low Light switching Capability
- Extra low light color pan/tilt/zoom with full 360º 216:1 continuous pan, 180º tilt
- Auto/Manual Focus and Iris
- 80 watt adjustable halogen light with detachable IR lens
- Motorized camera extender

Arm:

- Color camera with Auto/Manual focus
- Auto/Manual Iris
- Manually adjustable tilt
- 80 watt adjustable halogen light
- Manual 40:1 zoom
- Optional Arm Pan & Tilt Camera

Front Drive:

- B&W low light fixed focus; Auto Iris
- Optional Weapons Camera and laser sighting systems available.
- Optional Rear Drive Camera

Audio

- 2 Way Audio System with weatherproof speaker and microphone

Electrical

- 7 Isolated firing circuits: 24VDC
- Power supply: 24VDC spiral-cell battery pack, Battery Charger
- JAUS Compliant
- 1/4 Turn Connectors for easy connect/disconnect
- Data Links: Interchangeable Fiber Optic Cable Reel, RF Analog/Hybrid System, or Hard-line Cable Reel System

Environmental™

- Sealed, weather resistant enclosure
- Wet or dry surfaces

Other™

- 2.5 days of operator/maintenance training in Clinton, TN
- CD-ROM based operator and maintenance manual
- One year parts & labor warranty

Operator Control Unit™

- TAC-1 OCU with built-in LCD option
- Truck Mount Kit for vehicle integration
- Removable switchbox for direct connection to robot
- Tabletop with 15" LCD monitor with daylight readable, anti-glare screen
- Picture-in-picture display with camera selection switch
- Graphic display of vehicle status, console battery condition, camera setup functions, and sensor feedback
- Video and audio output for event recording
- Removable key firing circuit system
- Heavy duty, portable, weather resistant
- Includes 50 amp-hr 12VDC battery and 110VAC smart charger
- Operates on either 12VDC battery or GFI 110 or 220 VAC cord
- Microphone, speaker, and volume control
- 38 lbs., 10" x 23" x 18" (H/W/D) (17.3 kg, 254 x 584 x 457 mm H/W/D)

Andros™ Wolverine

All-terrain workhouse with extended mobility.

Six independent drive motors with removable tracks for "free wheel" mobility mean that Wolverine has the power to go anywhere you need it to perform. Its highly capable manipulator means you'll be able to act once you get there.

Raw Power

- Wolverine's highly capable manipulator can lift up to 145 lbs close to the body, and 60 lbs at full extension
- 6 independently powered wheels give Wolverine the ability go where other unmanned systems fear to tread

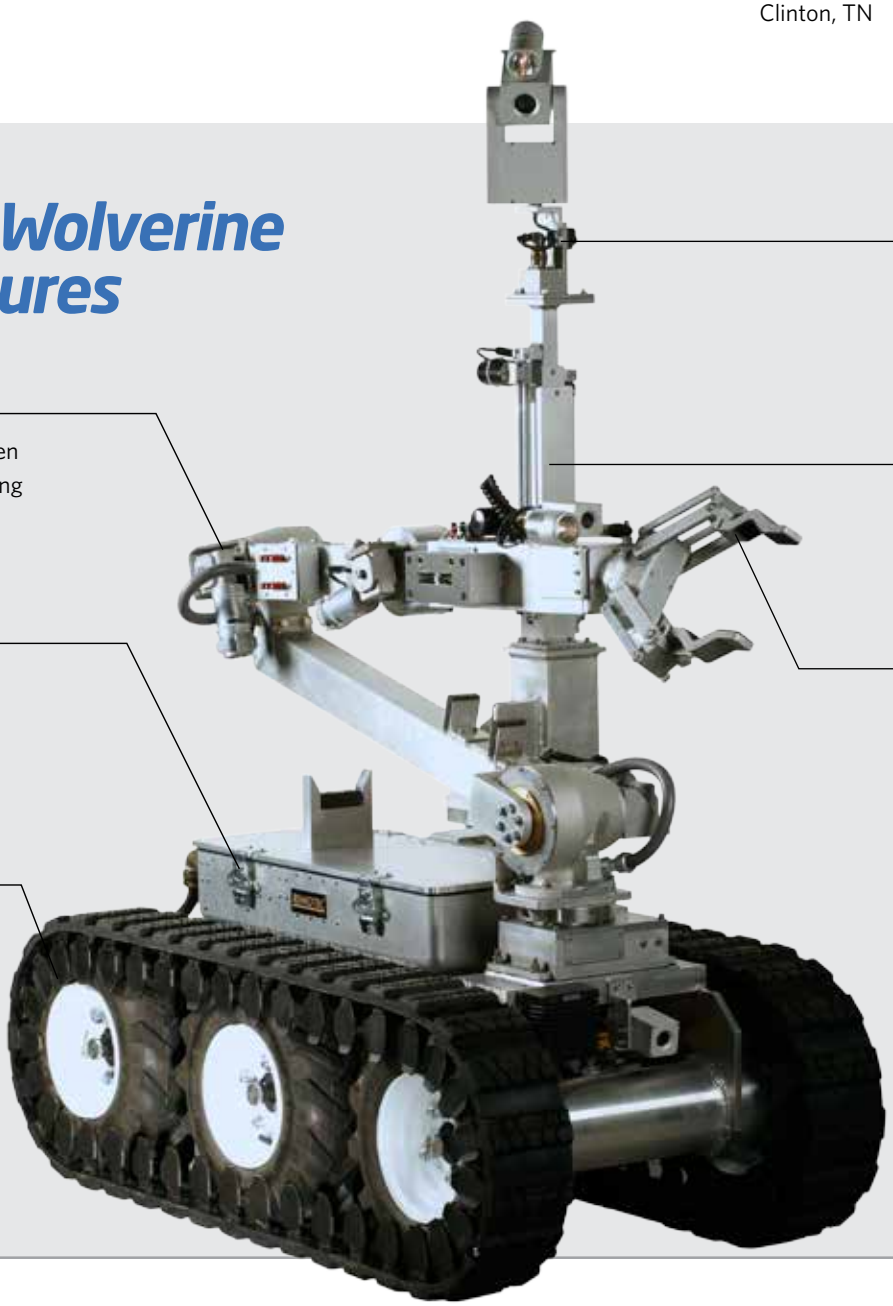
Ease of Operation

- A rugged, weather-resistant enclosure provides single module electronics access for quick field maintenance and repair
- Wolverine's tracked system and wide footprint make driving/operation a breeze

World Class Service & Support

- Each Andros™ unmanned system comes with access to the best service and support available, offering 24/7 on-call support technicians for over-the-phone troubleshooting & maintenance help
- Purchase includes 2.5 days of hands-on operator training at the Remotec facility in Clinton, TN

Andros™ Wolverine Key Features


Color surveillance camera with light, 216:1 zoom, pan/tilt
Manipulator arm with seven degrees of freedom ensuring optimum dexterity
24-inch camera extender
Single module electronics for quick field access
Powerful gripper provides up to 50 lbs of force with continuous 360º rotation
Six wheel drive provides superior all-terrain performance

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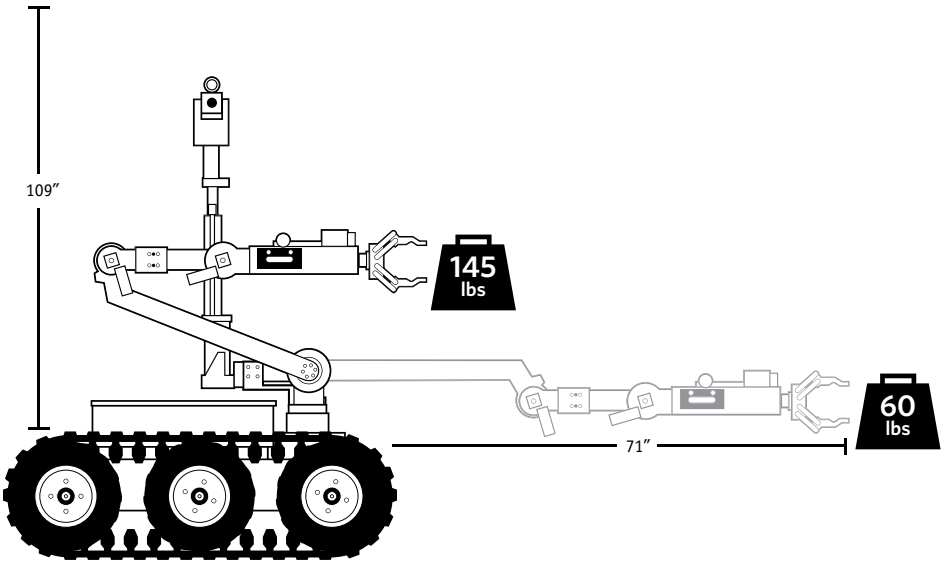


Andros™ Robots have more quick connect accessories and tools than any other robot manufacturer.

Dimensions

- Height: 69″ (1762 mm)
- Width: 29″ (445 mm)
- Length: 58″ (1474 mm)
- Ground Clearance: 5.5″ (140 mm)

Weight™

- 810 lbs (368 kg)

Mobility™

- 6 wheels with individual drive motors; Removable tracks & "free-wheel" mode
- Slope: 45º
- Speed: 0 to 2 mph (0 to 3.22 kph)
- Traverse: Opening up to 19″ (482 mm)
- Turning: Within the length of the vehicle

Manipulator™

- Variable Speed Control for precision
- Dual-sided quick change accessory mounting system
- Torso Rotate: +/-170º from center
- Shoulder: 210º
- Elbow: 210º
- Wrist: 210º
- Wrist extend: 8″ (203 mm)
- Grip rotate: 360º continuous
- Gripper: 0″ to 8″ open/close (0 to 203 mm); 0 to 50 lbs pressure (0 to 23 kgs)
- Lifting: 145 lbs at 18″ (66 kg @ 457 mm), 60 lbs at full extension (27 kg)
- Vertical reach: 109″ (2764 mm) with tracks down and arm fully extended
- Horizontal reach: 71″ (1805 mm) from front of vehicle

Cameras

Surveillance:

- Color camera with Low Light switching Capability
- Extra low light color pan/tilt/zoom with full 360º 216:1 continuous pan, 180º tilt
- Auto/Manual Focus and Iris
- 80 watt adjustable halogen light with detachable IR lens
- Motorized camera extender

Arm:

- Color camera with Auto/Manual focus
- Auto/Manual Iris
- Manually adjustable tilt
- 80 watt adjustable halogen light
- Manual 40:1 zoom
- Optional Arm Pan & Tilt Camera

Front Drive:

- B&W low light fixed focus; Auto Iris
- Optional Weapons Camera and laser sighting systems available.
- Optional Rear Drive Camera

Audio

- 2 Way Audio System with weatherproof speaker and microphone

Electrical

- 7 Isolated firing circuits: 24VDC
- Power supply: 24VDC spiral-cell battery pack, Battery Charger
- JAUS Compliant
- 1/4 Turn Connectors for easy connect/disconnect
- Data Links: Interchangeable Fiber Optic Cable Reel, RF Analog/Hybrid System, or Hard-line Cable Reel System

Environmental™

- Sealed, weather resistant enclosure
- Wet or dry surfaces
- All terrain

Other™

- 2.5 days of operator/maintenance training in Clinton, TN
- CD-ROM based operator and maintenance manual
- One year parts & labor warranty

Operator Control Unit™

- Removable switchbox for direct connection to robot
- 15″ LCD monitor with daylight readable, anti-glare screen
- Picture-in-picture display with camera selection switch
- Graphic display of vehicle status, console battery condition, camera setup functions, and sensor feedback
- Video and audio output for event recording
- Removable key firing circuit system
- Heavy duty, portable, weather resistant
- Includes 50 amp-hr 12VDC battery and 110VAC smart charger
- Operates on either 12VDC battery or GFI 110 or 220 VAC cord
- Microphone, speaker, and volume control
- 38 lbs., 10″ x 23″ x 18″ (H/W/D) (17.3 kg, 254 x 584 x 457 mm H/W/D)
- TAC-1 OCU with built-in LCD option
- Truck Mount Kit for vehicle integration

Introducing Titus

Smarter. Lighter. Faster. Stronger.

When Remotec introduced Andros™ robots to the EOD community over 25 years ago, we began a revolution in hazardous duty operations and defined an industry. We're proud to begin a new revolution with the introduction of Titus, our all-new, next generation Andros vehicle.

Vehicle & Chassis

- Unparalleled performance in sand, snow and other fine particulates
- Modular design approach allows users to reconfigure the base unit to meet a variety of missions
- Superior stair climbing thanks to the proven Andros™ dual-articulator design—the culmination of 25 years of extreme use
- 16.25" width (w/articulators) for use on airplanes, buses and trains
- Vehicle speed 7.5+ mph (12+ kph)
- Quick-swap BB 2590 batteries

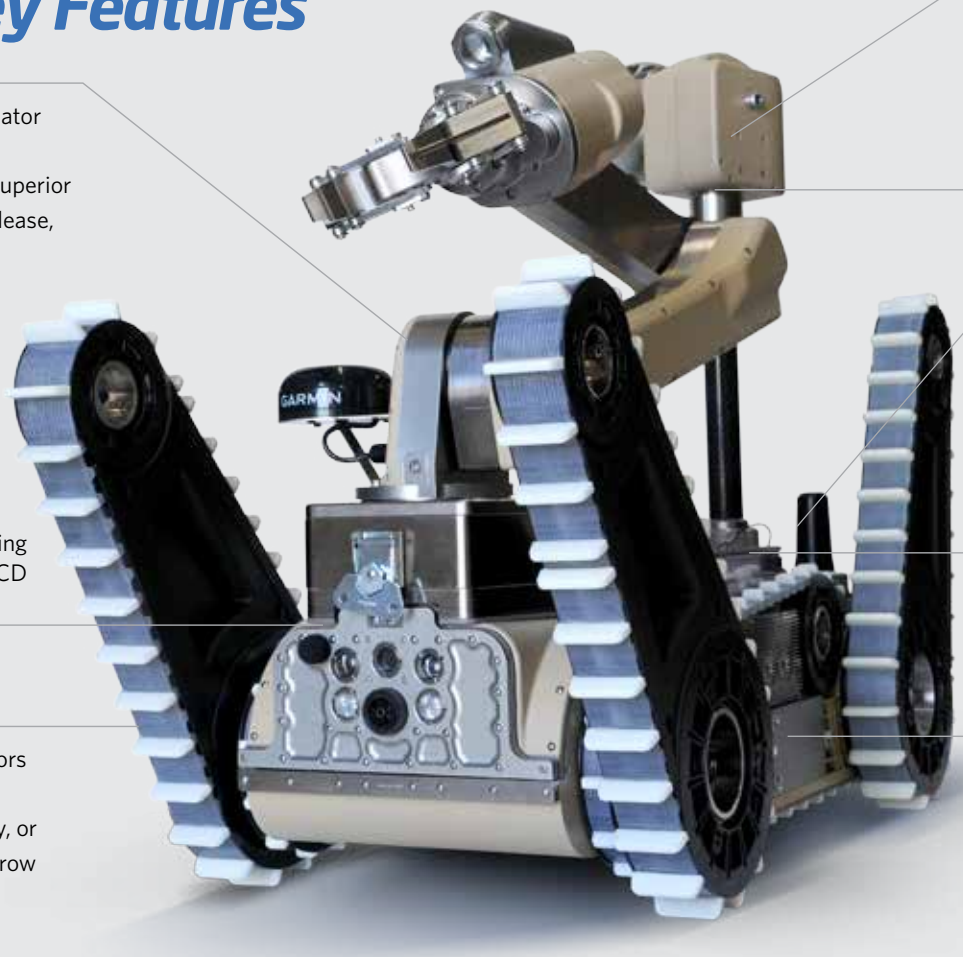
Manipulator

- "Fly the gripper" control for ease of user operation (joint-by-joint control possible, also)
- Preset positioning for rapid deployment
- 6 degrees of freedom, including torso rotate
- 15 lb (6.8 kg) full extension/20 lb (9 kg) close to body
- Manipulator can be removed quickly, without tools, to exchange for future specialized manipulators & payloads

Operator Control Unit

- First-of-its-kind touchscreen/physical button hybrid controller
- Main, Split, Quad-screen, PIP camera view windows, all resizable and moveable on the screen by user
- Thoughtful and easy-to-use approach to the user interface makes operation of the OCU a breeze
- Innovative radio vest option available to support tactical operations with OCU
- 3D real-time, on-screen position feedback

Titus Key Features



Incredible new manipulator design with all internal components provides superior capability, in a quick-release, versatile package

Quick-release Pan & Tilt with color 216:1 zoom can be removed with a twist of the wrist for low-clearance areas

Optional Tazer & Thermal imager

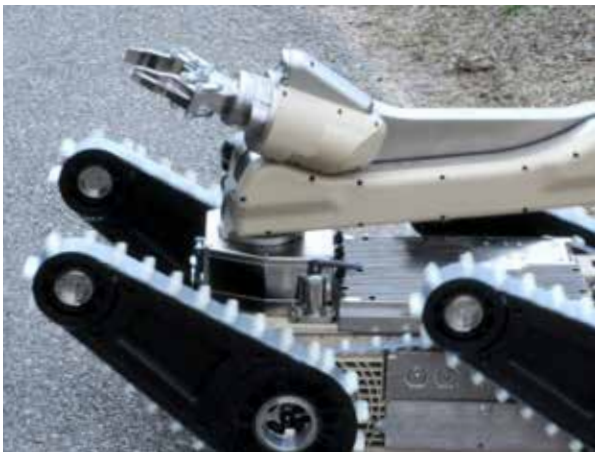
Integrated 1W or 5W radio for crystal clear audio & video communication

State of the art diagnostics and troubleshooting, including on-board diagnostics LCD screen

Picatinny rails for sensor & payload attachment

Quick-release articulators provide unmatched stairclimbing & mobility, or can be removed for narrow spaces such as bus or airplane aisles

Widely used & commercially available quick-swap BB 2590 batteries



Titus is the most versatile and customizeable unmanned ground system we've ever produced. In its most narrow configuration, Titus can easily navigate small aisles such as those found on aircraft and public transportation systems. Quick-connect/release articulators and optional wheels provide increased stairclimbing ability, and true all-terrain mobility.

Dimensions

- Width: 16.25" (base system); 24.25" with optional wheels
- Length: 28.75" (articulators folded); 51.5" (articulators extended)

Weight™

- 135 lbs (base system, including manipulator)

Mobility™

- All-terrain with four articulated tracks
- Slope: 45º including stairs
- Speed: 0 to 5+ mph (tracks only); 7.5+ mph with optional wheels
- Turning: Within the length of the vehicle

Manipulator™ (Light Duty)

- Quick-release manipulator
- Variable Speed Control for precision
- Control methods:
  - "Fly the Gripper"
  - Joint-by-joint
  - Preset Positioning
- Torso rotate +/- 180º
- Shoulder -90º to +135º
- Elbow +/- 135º
- Wrist +/- 135º
- Grip rotate: 360º continuous w/ feedback
- Gripper: 0" to 4" open/close; 0-45 lbs pressure
- Lifting: 15 lbs at full extension; 20 lbs close to platform

Cameras

Surveillance:

- Color camera with Night Vision (IR) switching
- 216:1 zoom
- Pan/tilt/with 360º pan; +/-90º tilt
- Auto/Manual Focus and Iris
- White Light/IR LED illumination

Arm:

- Color camera with fixed focus
- Auto Iris
- Integrated white light LED ring

Front Drive:

- Color camera with fixed focus
- Auto Iris
- Integrated white light LEDs

Rear Drive:

- Color camera with fixed focus
- Auto Iris

Audio

- 2 Way Audio System with weatherproof speaker and microphone

Environmental™

- IP65

Power

- BB2590 Batteries
- 3 hour continuous driving run-time

Operator Control Unit™

- Advanced Software/Graphical User Interface
- Cabled, hand-held control unit with color touchscreen & integrated tactile controls
- 8.4" Daylight readable screen
- Xbox-style controller
- 2-way audio
- Headset/mic
- Configuration options:
  - Integrated tactical vest for mobile operation containing radio & batteries
  - Vehicle Mount Kit

Communication

- 1W COFDM, No License Required (NLR) w/Tactical Communications Vest
  - 300m Line of Sight (LOS)
  - 100m Non-line of sight (NLOS)
- 1W COFDM, No License Required (NLR) w/Vehicle Mount Kit
  - 500m+ Line of Sight (LOS)
  - 350m Non-line of sight (NLOS)
- 5W COFDM, License Required w/ Vehicle Mount Kit
  - 600m+ Line of Sight (LOS)
  - 500m Non-line of sight (NLOS)

Optional Accessories

- Toolless, quick-release wheels
- Thermal imager
- Taser mount (X26)
- Plug and play sensor/detector mounts support: FIDO XT, MultiRae Plus, APD 2000, Raytek MI3, ANUDR-14, LCD 3.3, Ahura First Defender
- Recoilless disruptor mount
- GPS sensor

Titus Operator Control Unit

Titus is even more powerful as a platform thanks to a completely re-imagined operating system that makes operation simple, efficient, and—dare we say—fun. Integrating physical control buttons and an 8.4" multi-touch screen, the Titus OCU makes launching presets, flying the gripper, and other formerly complicated tasks feel like child's play.

Ease of Use

In redesigning the user experience for Titus, the most commonly used functions were made easily accessible, and simple to use via convenient touch screen controls that are always in reach. No more getting lost in complex menus.

Plug-and-Play Payloads

The Operating System was designed to make interacting with sensors & other payloads as intuitive as possible. When a sensor has something to tell you, its appearance will change to alert you. Sensor/detector support out of the box includes: *FIDO XT, MultiRae Plus, APD 2000, Raytek, MI3, ANUDR-14, LCD 3.3, and Ahura First Defender.*

Important Information Up Front

In addition to plugin alerts, an interactive 3D vehicle model provides real-time position feedback, and a system status area keeps users informed of critical information such as battery life, communications status and drive mode.

Custom Viewport

Choose from single view, split-screen, quad-screen, or multiple "floating" picture-in-picture screens, all easily resizable with a simple touch.

Control Systems & Data Link

TAC-1 Operator Control Unit

The TAC-1 Operator Control Unit puts all the functionality of our current table top control unit right in your hands while adding a bevy of new features in a durable and lightweight controller. Features an 8.4" Integrated LCD monitor, and works perfectly with the Truck Mount Kit for vehicle/command post integration. Also connects directly to the robot.

Andros™ Tabletop Controller

Operator Control Unit with 15" LCD, daylight readable monitor and removable switchbox controller for direct connection to vehicle. Video and audio outputs allow for event recording and optional headset display. Heavy duty, portable, weather resistant enclosure. Includes 50 amp-hr. 12VDC battery and 110VAC smart charger. 18" (46cm) x 23" (58.5cm) x 10" (25cm)

Truck Mount Kit

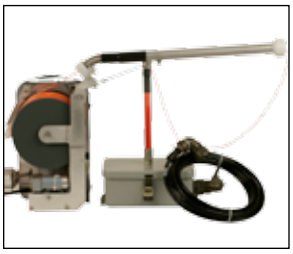
Free up valuable space in your response vehicle. This wall or work counter mountable kit allows you to connect video monitors, DVRs, audio systems, Andros™ Switchbox or TAC-1 OCU, and your choice of data link, replacing the standard tabletop controller.

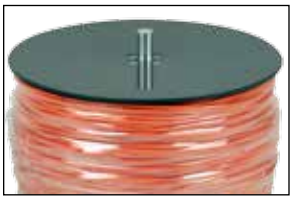
Andros™ Hand Controller

Walk behind control for ANDROS vehicles featuring simple drive controls (steering, articulators, and drive speed) with a 6' coiled cord lead.

Truck Cable Kit

Install an external data link port on your response vehicle. Various lengths of cable are available and allow you to locate the external port any distance from the Operator Control Unit (OCU). Available in lengths of 10', 20', and 40'.

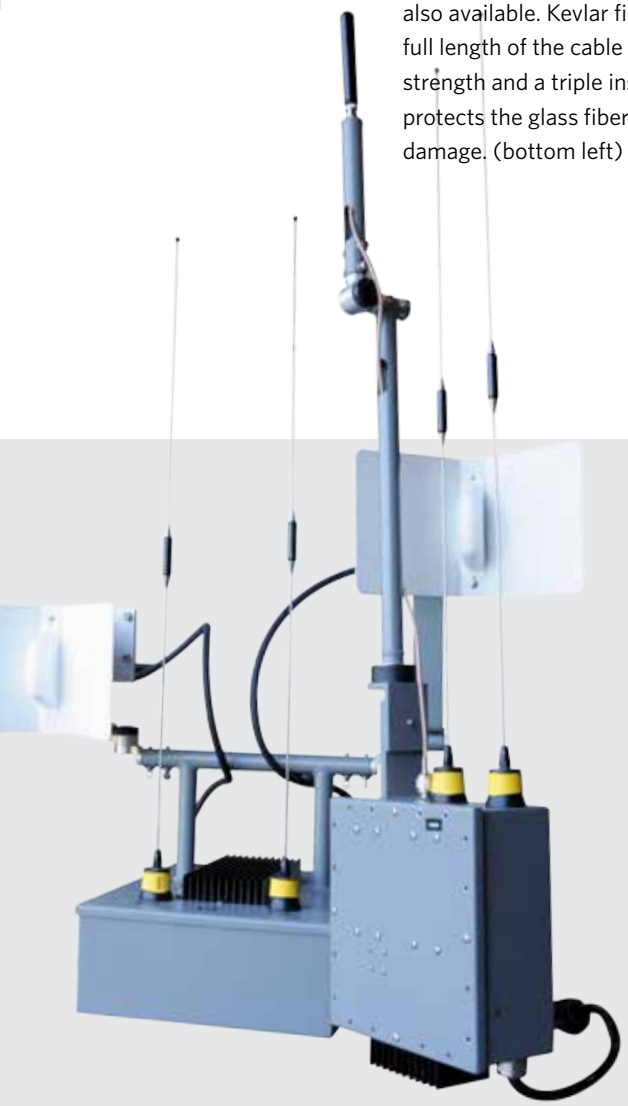




Fiber Optic Cable Reel

There are advantages over wireless. The Fiber Optic Cable Reel is a tethered link that provides crystal clear communication, has a maximum operating distance of 1200' and features controller operated re-spooling. Unlike radio transmissions, fiber optic communication cannot be "tuned in" by others and is not susceptible to jamming or interference.

A spare spool of high-quality fiber optic cable for emergency situations is also available. Kevlar fiber running the full length of the cable gives it tensile strength and a triple insulation jacket protects the glass fiber itself from damage. (bottom left)



Cable Reel Assembly 330'™

The Cable Reel Assembly is the most rugged tethered communications link available for ANDROS. Attach the included 25' jumper between the control station and the cable reel, then attach the free end of the cable reel to the robot.

Radio Jumper Assembly 30'™

This optional cable allows you to extend the placement of your console side radio for improved RF operation.

Foot Switch Assembly

Used in conjunction with the Fiber Optic Cable Reel Assembly, the Foot Switch connects to the Operator Control Unit to easily trigger the fiber take-up.

Digital Hybrid Radio Control

This powerful RF system utilizes a patented, proprietary radio architecture coupled with COFDM technology to provide increased ranges of up to 10x that of competing systems in line-of-site operation, and non-line-of-site ranges that are the best in the industry.

Operate in modern urban environments and penetrate deep into large facilities such as sports stadiums and convention centers, in elevators and tunnels – nearly everywhere long-range operations are desired or required by the mission

Vehicles shipped prior to 2007 will require a vehicle power supply upgrade. This radio requires an FCC license prior to use.

Audio/Video Options

Camera Pan & Tilt Assembly

Low light color pan/tilt/zoom camera with full 360º, 216:1 zoom, continuous pan, and 180º tilt. The camera also features an 80-watt halogen light with detachable IR lens, auto focus and iris, and the option for LED lighting on select models. This assembly can be used on the motorized extender or as an arm camera.

Rear Drive Camera

The optional rear drive camera is perfect for driving your Andros™ vehicle backwards, providing the same high-quality B&W, low light, fixed focus camera as the front drive system.

Camera Sighting Kit

This camera works with the Shotgun Mount, SL6 Mount, Street Sweeper Mount, Disrupter Mount, Dual Disrupter Mount and the Dual Pan Disrupter Mount. B&W camera with fixed focus. Auto iris compatible with optional Laser Filter Lens Assembly.

Laser Assembly

This 5mw laser removes the guesswork from sighting weapons. Disrupters with measured stand off benefit from two laser systems — when properly adjusted the two laser points will converge into a single point at the exact distance of your standoff.

Laser Filter

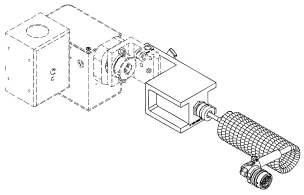
Recommended for use with the Laser Assembly, this optional filter for your weapons sighting camera increases the visibility of the laser on your control unit in bright outdoor

iRecon HD Camera System

iRecon is the most capable, highest quality Pan-Tilt-Zoom, gripper-held camera accessory on the market. The "plug and play" design of the iRecon takes only seconds to install. From undercarriage vehicle inspection to confined space surveillance, the capabilities of the iRecon are endless.

J32 Splitter

This splitter allows the operator to attach two J32 operated accessories via the single J32 connector on the manipulator arm. Both connectors provide power, only one connector provides video or data throughput.



Gripper Camera Mount

Allows you to hold the Pan & Tilt Camera (sold separately) in the gripper of the robot for scenarios requiring a lower profile for the manipulator such as looking under cars and in confined spaces.

High Intensity Light Assembly

Provides a penetrating beam of light useful for military or SWAT operations where additional light or distraction techniques are necessary. The intense light dazzles the eye and provides a degree of cover for your team. This mount includes its own 12-volt battery power source.

Heads-Up Display

This display headset contains dual LCD displays providing the same vivid image as the standard monitor in an isolated, distraction free environment. Audio feedback is provided by the built in headphone speakers. When wearing the headset, the robot controls are still clearly visible at your fingertips.

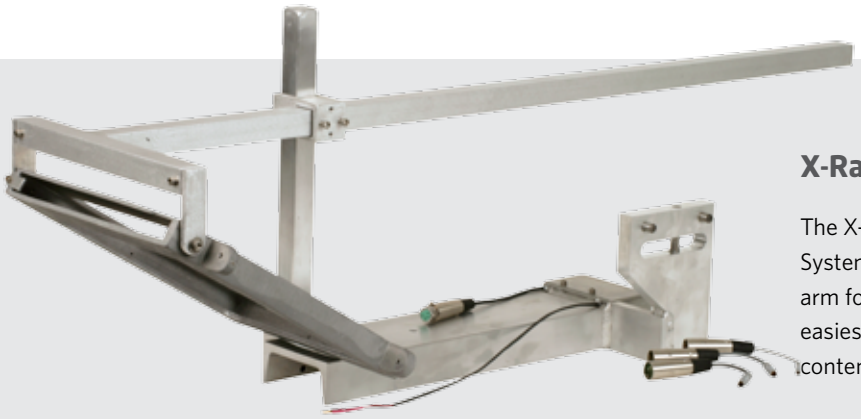
Sensor Mounts

APD2000™ MULTIRAE™ ADM 300 Detector Mounting Kit

This assembly is designed to integrate the APD 2000 Gas detector and or the Multirae Gas detector with your Andros™ vehicle. Cable Jumper Assemblies for the APD 2000 and Multirae detectors are included. All sensors can be remotely operated through the Andros™ menu system.

Contamination Smear Assembly

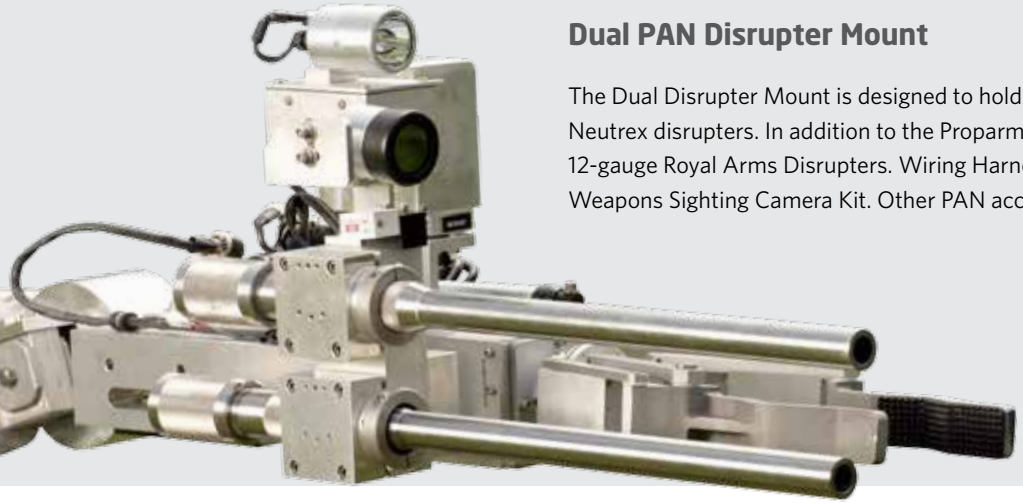
Place contamination sampling pads (not included) on each of the six, spring-loaded probes, then mount this clever device in the tip of the gripper. Take up to six surface samples from six different locations by swiping a surface, taking note of the number stamped at the base of the probe (visible through the arm camera), and then simply rotate the gripper to sample from another location.



X-Ray Assembly

The X-ray assembly mount allows the user to mount Golden X-Ray Systems Inspector 200, XR-150, and XR-200 units to the manipulator arm for taking a radioscopic image of a suspect package, one of the easiest and safest methods of determining a suspicious device's contents. (Works with drum & "bread-maker" style film.)

Dynamic Tools—Disrupters, Breaching & Launchers™



Dual PAN Disrupter Mount

The Dual Disrupter Mount is designed to hold a pair of PAN Disruptors, or 20 mm or 29 mm Neutrex disrupters. In addition to the Proparms Disrupters, the dual disrupter mount can mount 12-gauge Royal Arms Disrupters. Wiring Harnesses are included for use with Optional Lasers and Weapons Sighting Camera Kit. Other PAN accessories include:

Single PAN Disrupter Mount
Titanium T3 PAN Disrupter
PAN Disrupter Standard™
PAN Disrupter with Aluminum Stand
PAN Disrupter with Electric Breech

Breacher Mount 37 & 40mm™

The mount is primarily used in military or SWAT applications where 37mm projectiles such as gas canisters or other non-lethal munitions are called for. Breacher options include:

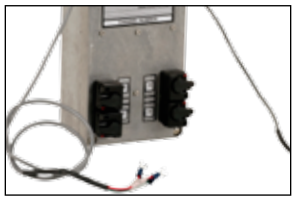
GL6 40mm with or without rifling™
GL6 37mm with or without rifling™
BR-SL65 37mm ™Sage or Arwen ammo™

Striker Mount

Mount is designed to hold the Striker 12 shotgun which is remotely operated via the Andros™ weapons circuit. The mount may be further accessorized with a video sighting camera and a laser for accurate targeting. Also available:

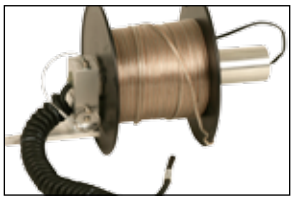
Striker 12 Shotgun

Initiators, Shock Tube, and Wire Coil



Shock Tube Initiator

Allows the machine to actuate disrupters and other devices requiring shock tube operation. Each of the individual initiating ports is wired directly to the corresponding "voltage" weapons ports on the upper portion of the Andros™ arm allowing up to two shock tube firing locations or a combination of voltage and shock tube. Available in 1, 2, or 4 channel units.



Charge Dropper Assembly

Use your Andros™ system to place explosive charges remotely and then retreat to a safe distance (330 ft. length) before detonating. Charge dropper assembly mounts behind gripper, and includes quick-release pin system.

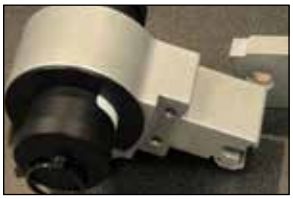
PR Corp. Fire Wire Coil Kit

Enable rapid remote deployment under any weather conditions with this 23 gauge, dual strand, lubricant-coated and insulated copper firing wire. US Military combat tested and proven. Total Resistance: 7 Ohms, Tensile Strength: 12-15lbs.

Kit includes: 1 200m Coil Holder, 1 50/100m Coil Holder, 2 each of 50m, 100m, and 200m Fire Wire Coils, 1 Square Mount w/ Extension for use with G-Man® FADD Kit*, and 1 Picatinny Rail Mount. (Pieces are also available individually)

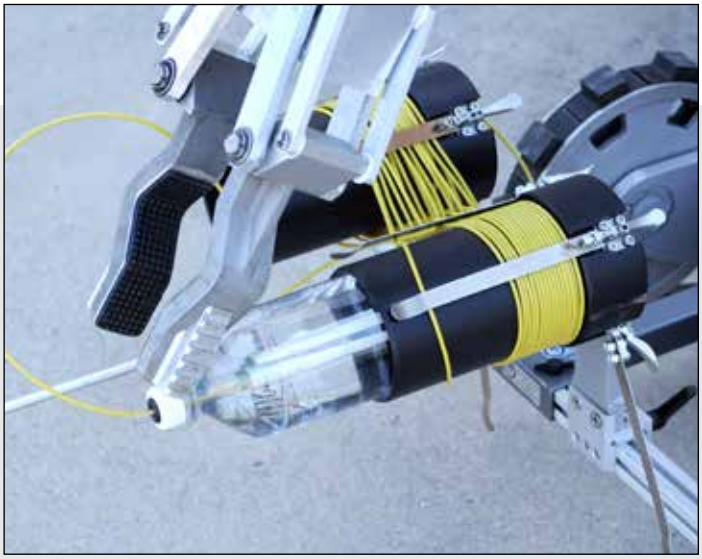
PR Corp. Fire Wire Coils

23 gauge, dual strand, lubricant-coated and insulated copper firing wire available in lengths of 50m, 100m, and 200m. US Military combat tested and proven. Total Resistance: 7 Ohms Tensile Strength: 12-15lbs.



Coil Holder & Adapter

Mount the PR Corp. Fire Wire Coil either on the G-Man® FADD Kit with a square mount & extension, or elsewhere via a Picatinny Rail Mount. Holds 200m coil, with a separate adapter is available for 50m and 100m coils.



PR Corp. Shock Tube Dispenser Kit

System consists of 3 reels, each able to hold up to 43' of shock tube. Mount one reel to the Picatinny rail on the grip for manipulator delivery of a single disablement tool. The remaining two reels can be mounted to the G-Man® FADD kit providing as much as 192' of standoff between a FADD deployed disablement tool such as a Bootbanger or Trunktrasher and the system.

Individual Dispensers and Picatinny and FADD mounting hardware also available.

Misc. Tools & Accessories

Gripper Block Assembly

This gripper block, which can be held inside the gripper of all Andros™ products, is designed to hold lengths of 1" PVC as frangible standoff, or other devices designed to fit into the assembly. The operator can place it aside for full use of the platform's gripper, and then then pick the tool back up by the Gripper Block for further use or retrieval.

Window Breaker Assembly

Allows the user break glass without having to use excessive force. The persuaded center punch is held within the fingers of the gripper. Once in position the Window breaker is pressed slowly into the glass until the punch releases and shatters the glass.

Picatinny Rail Claw Assembly

These stainless steel claws can be mounted with claws inward for gripping object (pipe bombs) or outward for opening card board boxes or any other soft material containers.

Picatinny Rail Cable Cutter Assembly

Attaches to the end of the gripper fingers and allows operation of cable cutters. Gain access to areas by cutting through various cables, fences, wires and other obstacles preventing entry.

Water Disrupter Deployer

Allows placement of a "suitcase" style disrupter under a vehicle or wherever the situation calls for. Once the disrupter is properly placed, simply back the Andros™ away and remotely detonate the disrupter using any of the available weapons circuits.

Circular Saw Assembly

DeWalt 36v circular saw (36v battery included) assembly is held within the gripper of the Andros™ for remote operation.

Reciprocating Saw Assembly

DeWalt 36v Reciprocating Saw (36v battery included) is held within the gripper of the Andros™ for remote operation.

Cordless Drill Assembly

DeWalt 36v Cordless Drill (36v battery included) assembly is held within the gripper of the Andros™ for remote operation.

EU Partners Gas Dispenser Mount

Designed to hold a pressurized canister fitted with a spraying nozzle. Popular military or SWAT accessory for crowd control or other volatile situations where CS gas or pepper spray may be necessary to diffuse hostile actions. Nozzle mounts to surveillance camera allowing operator to direct the stream.

Ideal Mini Gander

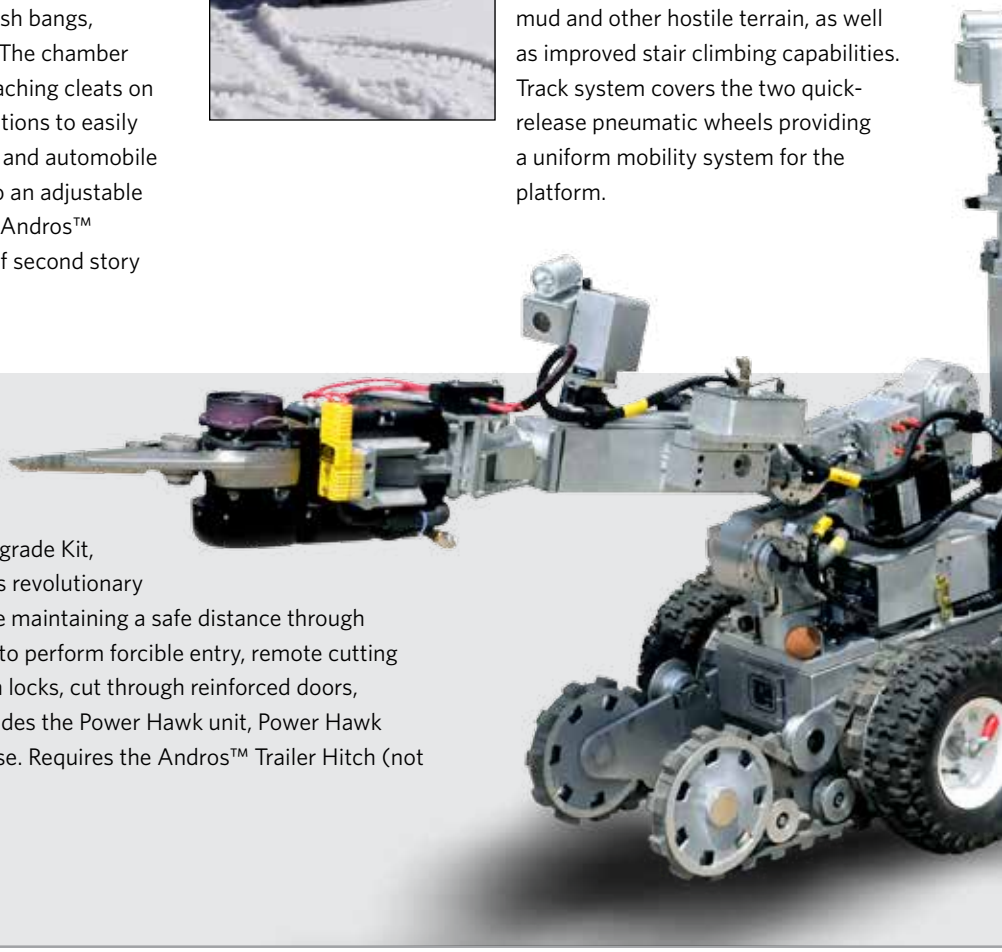
System is able to pierce walls, windows, peer under cars, into trailers, and crawl spaces using spear point. Operation ready in under one minute, and weighing less than 10 lbs. the system includes two low-light black and white cameras, and easily connects to J32 weapons port.

Wall Banger™Kit

The WallBanger™ is a carbon steel chamber that accepts 8901C1 distraction devices (flash bangs, smoke grenades, etc). The chamber has tungsten steel breaching cleats on its face in various directions to easily breach hardened glass and automobile safety glass. Mounts to an adjustable height pole held in the Andros™ gripper for breaching of second story windows.

F6 Track Kit

Improves overall mobility of your Andros™ F6 Series platform in snow, mud and other hostile terrain, as well as improved stair climbing capabilities. Track system covers the two quick-release pneumatic wheels providing a uniform mobility system for the platform.



Power Hawk Assembly

Remotec is proud to offer the Power Hawk System Upgrade Kit, developed with TSWG, for ANDROS F6A owners. This revolutionary system allows for the full use of the Power Hawk while maintaining a safe distance through the agility and dependability of the F6A, allowing you to perform forcible entry, remote cutting operation, vehicle access, mechanical breaching, open locks, cut through reinforced doors, 3/8" steel plate, and burglar bars. This assembly includes the Power Hawk unit, Power Hawk Adaption/Mounting Kit, and Power Hawk carrying case. Requires the Andros™ Trailer Hitch (not included).

B.A.T.S.™ Block Accessory Tool™ System

The Block Accessory Tool System from Edge Tactical is for mitigation and speedy recovery from IEDs or potential suicide bombers. Some of the system's capabilities include the ability to disable a vehicle, break a car window, cut a suicide bomber vest away from a suspect, or rescue a person without loosing the full use of your Andros™ gripper.

Kit includes: (1) Andros™ compatible gripper block, (2) Picatinny rail gripper blocks, rubberized flat hook, cutting hook, rescue hook, large deflator/punch, small deflator/punch, package ripper, window breaker, and custom carrying case.

Maintenance & Miscellaneous

Spare Vehicle Battery

Extend the mission time of your Andros™ platform with a spare vehicle battery. Batteries are easily accessible and easy to change out, ensuring that your operation can continue with minimal disruption. (HD CE battery shown, available for all models)

Andros™ Trailer Hitch

This receiver assembly can be mounted to the front or rear of your Andros™ (excluding HD Series). Useful for a variety of operations such as towing trailers, or use with the Power Hawk Rescue System.

Spare Controller Battery

Get more mission time from your Operator Control Unit (OCU) with this 12v Spare Controller Battery. (Protective cover shown is not included.)

F6 Standard Spare Track

Articulator tracks worn, chewed, or broken during a mission? Keep the operation going by having a spare track on hand for quick and easy replacement.

Emergency Spare Parts Kit

This kit contains every major electrical component found inside your Andros™ along with hardware to rebuild one side of your machine's chassis. Should you ever experience a failure during a critical mission having this kit could save someone's life. For a complete list of included components, please contact Remotec Sales or Service.

Andros™ Overhaul Kit

The Overhaul Kit is designed to provide you with everything necessary to renew the investment you made in purchasing an Andros™ robot. Include a new battery and all hardware necessary to rebuild/renew all components of the arm and chassis.

Semi-Annual Maintenance Kit

Periodic maintenance is essential in keeping your Andros™ in top operating condition. Remotec Service recommends performing chassis maintenance at least twice yearly. This kit contains all of the hardware necessary to perform one of these maintenance sessions. For a complete list of included components, please contact Remotec Sales or Service.

Extended Service Contract

Keep your Andros™ under a Remotec Service Contract plan beyond the included first year with this contract. Contact Remotec Sales or Service for more information.

Training & Service

Remotec, Inc. offers specialized and custom training classes for all vehicles in our product line, tailored to your specific system and schedule.

The Standard Operation and Maintenance Course

This course covers mechanical maintenance, electrical troubleshooting and basic operations training. This training course greatly increases users' confidence levels and teaches the importance of preventative maintenance. Most customers take advantage of this training at the time of purchase to provide a head start incorporating their robot into their existing arsenal of EOD tools.

Many customers, especially those in the military—due to the reallocation of personnel—repeat the class periodically to maintain operator confidence and train personnel who did not attend the original class.

This course is included in the initial purchase of an ANDROS system. The course must be scheduled within one year of purchase.

Service & Tune-Up Training

Remotec, Inc. also offers a second, more detailed class, for those customers whose systems have been fielded longer, with more strenuous use than most.

This Service/Tune-up Course is 30 hours long, allowing time to get into greater detail in regard to mechanical teardown, and thorough electrical tune-up. This class provides your operators and technical personnel to work with ours, performing a complete tear down inspection and rebuild of the system.

During this process Remotec will replace minor hardware (screws, nuts etc.) as necessary, replace any gaskets, and repair any stripped holes as required to ensure reliable future performance.

The training personnel will retune all amplifier controllers as necessary and check all other boards for proper adjustment, correct any minor wiring problems, board problems, lubricate, and perform a basic cleaning of the entire system. The cost of the class includes all basic parts and material. Purchase of additional components to replace those that cannot be repaired may be necessary.

This extended class will also allow time for basic operator training and other driving tips as presented in the original basic training class. An additional training day for advanced driving is also available at additional cost.
This course is a great opportunity for your technical personnel to gain experience and build confidence on their hardware. It also provides piece of mind relating to your older system in terms of status and reliability, while enabling you to become acquainted with new options and accessories that have become available since the original system was purchased.

On-Site Training

Remotec is pleased to offer either of these courses on-site with Remotec technicians and instructors that will travel to your location.

The cost varies depending on the course and the travel costs associated with the location. Additional costs include: airfare, hotel, car rental, training course cost, per diem and travel labor. We can also accommodate more than six individuals and multiple robots if needed. Please contact us for more details if you require on-site training.

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